WHAT IS CLAIMED

1. An alignment device comprising:

a base, the base having a mounting plane;

an insertion guide, having an opening therein and an insertion axis through the opening;

an adjustable joint attached to a distal end of the insertion guide, and coupled to the base;

a local adjustment device attached to the adjustable joint; and

an actuator remotely coupled to the local adjustment device, the actuator being controlled from a remote location.

2. The alignment device of claim 1, wherein the adjustable joint includes a ball and socket joint.

3. The alignment device of claim 1, wherein the local adjustment device includes a linear slide coupled to the insertion guide.

4. The alignment device of claim 3, wherein the linear slide includes a threaded adjuster coupled to a collar, the collar being coupled to the insertion guide.

5. The alignment device of claim 4, wherein the collar includes a ball and socket joint coupled to the insertion guide.

6. The alignment device of claim 1, wherein the local adjustment device includes a rotating joint that rotates about an axis normal to the mounting plane.

7. The alignment device of claim 6, wherein the rotating joint includes a worm gear mechanism.

8. The alignment device of claim1, wherein the actuator includes an electrically powered actuator.

9. The alignment device of claim 8, wherein the electrically powered actuator includes a stepper motor.

10. An alignment system comprising:
an imaging device;
an alignment device comprising:
a base, the base having a mounting plane;
an insertion guide, having an opening therein and an insertion axis through the opening;
an adjustable joint attached to a distal end of the insertion guide, and coupled to the base;
a local adjustment device attached to the adjustable joint;
a detachable actuator coupled to the first local adjustment device;
a control module in remote communication with the actuator and in communication with the tissue imaging device, the control module aligning the insertion axis with the target location.

11. The alignment system of claim 10, wherein the control module includes microcomputer.

12. The alignment system of claim 10, wherein the imaging device includes a magnetic resonance imaging (MRI) device.

13. The alignment system of claim 10, further including a first reference device coupled to the insertion guide, the first reference device being capable of locating the insertion axis in three dimensional space relative to a patient.

14. The alignment system of claim 13, further including a second reference device coupled to a patient reference frame patient, the second reference device being capable of locating the patient relative to the first reference device.

15. The alignment system of claim 13, wherein the first reference device includes a conducting coil capable of locating the insertion axis in three dimensional space relative to the patient.

16. The alignment system of claim 13, wherein the first reference device includes a number of LED devices capable of locating the insertion axis in three dimensional space relative to the patient.

17. The alignment system of claim 13, wherein the first reference device includes a number of infra red (IR) reflecting devices capable of locating the insertion axis in three dimensional space relative to the patient.

18. The alignment system of claim 13, wherein the first reference device includes a potentiometer capable of locating a primary medical device along the insertion axis.

19. The alignment system of claim 13, wherein the alignment system is a closed loop system.

20. A method of aligning a medical device comprising:

coupling a base to a patient reference frame;

attaching an insertion guide to the base using an adjustable joint, the insertion guide having an insertion axis, and the adjustable joint having a range of motion;

attaching a local adjustment device to the adjustable joint;

coupling a detachable actuator to the local adjustment device; and

remotely actuating the actuator to adjust the insertion axis within the range of motion.

21. The method of claim 20, wherein coupling a base to a patient reference frame includes attaching a base directly to the skull of a patient.

22. The method of claim 20, wherein coupling the detachable actuator to the local adjustment device includes remotely coupling the actuator to the local adjustment device.

23. The method of claim 20, wherein actuating the actuator includes engaging a rotary motor, the rotary motor being coupled to the local adjustment device by a rotating cable drive.

24. The method of claim 23, further including coupling the actuator to a remote control module, the remote control module being capable of adjusting the insertion axis by remotely actuating the actuator.

25. The method of claim 24, further including:

imaging a patient with a tissue imaging device;

inputting a target location to the control module; and

computing an adjustment with the control module and aligning the insertion axis with the target location through actuation of the actuator.

26. The method of claim 25, wherein computing an adjustment with the control module and aligning the insertion axis includes computing an adjustment with the control module and aligning the insertion axis using a closed loop system.

27. A method of manufacturing an alignment device comprising:

providing a base;

coupling an adjustable joint to the base;

coupling an insertion guide to the adjustable joint;

attaching a local adjustment device to the adjustable joint, the adjustment device being capable of adjusting the insertion guide within a range of motion;

attaching a detachable actuator to the local adjustment device; and

remotely coupling a control module to the actuator.

28. The method of claim 27, wherein attaching a detachable actuator to the local adjustment device includes remotely coupling a rotary motor to the local adjustment device through a rotating cable.

Deposition Exhibit